

REMARKS

In accordance with the foregoing, the specification and claims 1-4, 7-12, 16-26, and 28-30 have been amended. Claims 1-4 and 7-31 are pending, with claims 1 and 28 being independent. No new matter is presented in this Amendment After New Grounds of Rejection by Board of Patent Appeals and Interferences Under 37 CFR 41.50(b)(1).

Amendments to Specification and Claims and Entry of Amendment After New Grounds of Rejection by Board of Patent Appeals and Interferences Under 37 CFR 41.50(b)(1)

Paragraphs [0043] and [0049] of the specification have been amended to change "good thermal radiation property" to "good heat radiation property" to be consistent with "good heat radiation property" in paragraphs [0023], [0034], [0035], and [0040] of the specification and in claims 7 and 25.

Claims 1-4, 7-12, 16-26, and 28-30 have been appropriately amended pursuant to 37 CFR 41.50(b)(1) and MPEP 1214.01(I) in response to the three new grounds of rejection under 35 USC 112, second paragraph, set forth on pages 9 and 10 of the Decision on Appeal of August 3, 2009, by the Board of Patent Appeals and Interferences pursuant to 37 CFR 41.50(b). Accordingly, it is submitted that entry of this Amendment After New Grounds of Rejection by Board of Patent Appeals and Interferences Under 37 CFR 41.50(b)(1) is proper under 37 CFR 41.50(b)(1) and MPEP 1214.01(I), and it is respectfully requested that it be entered.

Request for Consideration of Information Disclosure Statements

Information Disclosure Statements were filed on September 9, 2008, and April 15, 2009, and it is respectfully requested that these Information Disclosure Statements be considered.

Allowable Subject Matter

The rejections of claims 1-4, 7-27, and 29-31 under 35 USC 103(a), which were the only outstanding rejections, were reversed in the Decision on Appeal of August 3, 2009. Independent claim 28 was allowed in the Examiner's Answer of November 8, 2007. However, claims 1-4 and 7-31 were rejected under 35 USC 112, second paragraph, in the Decision of Appeal of August 3,

2009. Accordingly, it is submitted that claims 1-4 and 7-31 would allowable if these rejections under 35 USC 112, second paragraph, were overcome, and an indication to that effect is respectfully requested.

Claim Rejections Under 35 USC 112

On pages 9 and 10 of the Decision on Appeal of August 3, 2009, the Board of Patent Appeals and Interferences has set forth three new grounds of rejection under 35 USC 112, second paragraph, based on language that has been present in the claims ever since the present application was filed. The Examiner did not reject any of the claims under 35 USC 112, second paragraph, or otherwise object to any of the language of any of the claims in any of the three Office Actions, three Final Office Actions, two Advisory Actions, and two Examiner's Answers that the Examiner has issued.

Rejection 1

Claims 1-4 and 7-31 have been rejected under 35 USC 112, second paragraph, as being indefinite for the reasons set forth on pages 9 and 10 of the Decision on Appeal of August 3, 2009. This rejection is respectfully traversed.

The Board states as follows:

Claims 1-4, 7-27, and 29-31 and allowed independent claim 28 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1 and 28 call for a cover heater formed as a thin film on the top surface of the cover. Next, the claim calls for a heat resistant layer formed on the surface of the cover heater. Such a recitation necessarily implies that the heat resistant layer is in surface-to-surface contact with the cover heater. However, in the next claim recitation, a reflective layer is claimed between the cover heater and the heat resistant layer. A reflective layer interposed between the cover heater and the heat resistant layer contradicts the surface-to-surface contact implied by the two prior claim recitations. Accordingly, claims 1-4, 7-27, and 29-31 and allowed independent claim 28 are rejected as inherently inconsistent with themselves and with the descriptions, definitions, and examples appearing in Appellants' specification.

The appellants do not concede that the recitation "a heat resistant layer formed on the surface of the cover heater" referred to by the Board "necessarily implies that the heat resistant layer is in surface-to-surface contact with the cover heater" as stated by the Board. However, solely in an effort to eliminate this issue and advance the prosecution of the application, independent claims 1 and 28 have been amended to recite the following features to eliminate the alleged contradiction identified by the Board (emphasis added):

a cover heater disposed on a surface of the cover facing away from the main body, the cover heater being constituted by a thin film type heater;

a heat-resistant layer disposed so that the cover heater is disposed between the surface of the cover facing away from the main body and the heat-resistant layer; [and]

a reflective layer disposed between the cover heater and the heat-resistant layer.

It is submitted that claims 1 and 28 in their present form no longer "call[] for a heat resistant layer formed on the surface of the cover heater" as stated by the Board, such that there is no longer any contradiction caused by "[a] reflective layer interposed between the cover heater and the heat resistant layer" as stated by the Board.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 1-4 and 7-31 (i.e., claims 1 and 28 discussed above and claims 2-4, 7-27, and 29-31 depending directly or indirectly from claim 1) under 35 USC 112, second paragraph, be withdrawn.

Rejection 2

Claims 2, 3, and 18-20 have been rejected under 35 USC 112, second paragraph, for the reasons set forth on page 10 of the Decision on Appeal of August 3, 2009. This rejection is respectfully traversed.

The Board states as follows (emphasis added):

Claims 2, 3, and 18-20 are rejected under 35 U.S.C. § 112, second paragraph, in that the heater claimed in claim 2 is said to be formed over the entire top surface of the cover. As plainly can be seen, the single wire pattern does not cover the entire top surface of Appellants' claimed cover. Likewise, in claim 18, the single wire [*sic*] is said to cover the entire body of the crucible.

Thus claims 2, 3, and 18-20 are inherently inconsistent with the descriptions, definitions, and examples appearing in Appellants' Specification.

Paragraph [0022] of the specification as originally filed states as follows (emphasis added):

[0022] According to still other embodiments, the main body may be formed of an insulating material, and the body heater may be formed as a thin film type on the outer wall of the main body. In this case, each of the cover heater and the body heater may be formed as a single wire pattern laid over the entire top surface of the cover or the entire outer wall of the main body, the single wire pattern having a positive and a negative terminal at respective ends of the single wire pattern. The single wire pattern of each of the cover heater and the body heater may be formed of platinum by printing.

Paragraph [0031] of the specification as originally filed states as follows (emphasis added):

[0031] The cover heater 43 has a positive terminal 43a and a negative terminal 43b at both ends, respectively, through which external electricity is supplied to generate heat, and which are connected to external wires 44a and 44b, respectively. The cover heater 43 is formed by coating a material having a predetermined resistance, and capable of generating an electrical current, as a thin layer. The cover heater 43 may have a concentric pattern around the nozzle 42, as shown in FIG. 4C. However, any other patterns which can be laid over the entire top surface of the cover 40 can be applied. FIG. 4C is a plan view of the cover 40, in which the heat-resistant layer 46 is not illustrated in order to show a pattern of the cover heater 43.

Paragraph [0045] of the specification as originally filed states as follows (emphasis added):

[0045] First, since the entire cover is uniformly heated, clogging of the nozzle by an organic substance recrystallized near the nozzle does not occur, even when deposition of the organic substance is performed for a longer duration.

Claim 2 as originally filed states as follows (emphasis added):

2. The heating crucible of claim 1, wherein the cover heater is formed as a single wire pattern laid over the entire top

surface of the cover, the single wire pattern having a positive and a negative terminal at respective ends of the single wire pattern.

Claim 18 as originally filed states as follows (emphasis added):

18. The heating crucible of claim 17, wherein the body heater is formed as a single wire pattern laid over the entire outer wall of the main body, the single wire pattern having a positive and a negative terminal at respective ends of the single wire pattern.

As apparently recognized by the Board, claim 2 as it was considered by the Board in the Decision on Appeal of August 3, 2009, recites "the entire cover heater is constituted by a single wire pattern formed over the entire top surface of the cover," and claim 18 as it was considered by the Board in the Decision on Appeal of August 3, 2009, recites "the entire body heater is constituted by a single wire pattern formed over at least the entire outer side wall of the main body." However, it is not understood why the Board considers this language to indicate that the single wire pattern of the entire cover heater covers the entire top surface of the cover, and that the single wire pattern of the entire body heater covers at least the entire outer side wall of the main body, as can be inferred from the Board's statement that "[a]s plainly can be seen, the single wire pattern does not cover the entire top surface of Appellants' claimed cover" (emphasis added), particularly since claims 2 and 18 do not explicitly recite this.

It is submitted that paragraph [0031] of the application as originally filed, which is reproduced above, indicates that the appellants consider the single wire pattern of the cover heater 43 shown in FIG. 4C that is concentric around the nozzle 42 to be a single wire pattern laid over the entire top surface of the cover 40, even though portions of the cover 40 are exposed by the single wire pattern of the cover heater 40. Accordingly, it is submitted that the recitations "the entire cover heater is constituted by a single wire pattern formed over the entire top surface of the cover" in claim 2 and the recitation "the entire body heater is constituted by a single wire pattern formed over at least the entire outer side wall of the main body" in claim 18 as claims 2 and 18 were considered by the Board in the Decision on Appeal of August 3, 2009, are not in fact "inherently inconsistent with the descriptions, definitions, and examples appearing in Appellants' Specification" as alleged by the Board.

However, although the propriety of the rejection is not conceded, solely in an effort to eliminate this issue and advance the prosecution of the application, claim 2 has been amended to recite the following feature to eliminate the alleged inconsistency identified by the Board:

wherein the entire cover heater is constituted by a single wire pattern extending over the entire surface of the cover facing away from the main body except where the single wire pattern of the entire cover heater exposes portions of the surface of the cover facing away from the main body,

and claim 18 has been amended to recite the following feature to eliminate the alleged inconsistency identified by the Board:

wherein the entire body heater is constituted by a single wire pattern extending over an entire outer side wall of the main body except where the single wire pattern of the entire body heater exposes portions of the outer side wall of the main body.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 2, 3, and 18-20 (i.e., claims 2 and 18 and claims 3, 19, and 20 depending therefrom) under 35 USC 112, second paragraph, be withdrawn.

Rejection 3

Claims 7, 8, 25, and 26 have been rejected under 35 USC 112, second paragraph, as being indefinite for the reasons set forth on page 10 of the Decision on Appeal of August 3, 2009. This rejection is respectfully traversed.

The Board states as follows:

Claims 7, 8, 25, and 26 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Each of these claims recite that a material which is a constituent of Appellants' invention "has a good heat radiation property." However, Appellants have not provided in the Specification, any guidance as to what would satisfy a claim limitation directed to "a good heat radiation property" as opposed to a poor heat radiation property. When Appellants include terms of degree in a claim, it is incumbent upon Appellants to specify some standard for measuring or interpreting that degree. In this instance, Appellants have failed to do so.

On page 8 of the Decision of Appeal of August 3, 2009, the Board cites *Seattle Box Co. v. Indus. Crating & Packing, Inc.*, 731 F.2d, 818, 826 (Fed. Cir. 1984), as support for this rejection.

Paragraph [0023] of the specification as originally filed states as follows (emphasis added):

[0023] According to still other embodiments, the cover and the main body may be formed of an insulating material having a good heat radiation property, such as aluminum nitride or alumina.

Paragraph [0034] of the specification as originally filed states as follows (emphasis added):

[0034] Suitable materials for the cover body 41 include insulating materials having good heat radiation property. In a conduction heating type cover heater where heat generated by the cover heater 43 is directly transferred to an organic substance by conduction, the organic substance is likely to decompose as a result of the heat conduction. However, this problem of thermal decomposition of the organic substance can be eliminated to some extent when heat generated by the cover heater 43 is transferred to the organic substance by heat radiation rather than heat conduction. Therefore, it is preferable that the cover body 41 is formed of a material having good heat radiation property, even if its thermal conductivity is low. Use of a material having a good heat radiation property improves thermal efficiency. An example of a material having a good heat radiation property is alumina (Al₂O₃).

Accordingly, contrary to the position taken by the Board, it is submitted that the appellants have in fact provided in the specification "guidance as to what would satisfy a claim limitation directed to 'a good heat radiation property' as opposed to a poor heat radiation property" by stating that aluminum nitride and alumina are examples of materials having a "good heat radiation property" as recited in dependent claims 7 and 25. Accordingly, it is submitted that one of ordinary skill in the art would be able to determine whether a particular material has a "good heat radiation property" as recited in dependent claims 7 and 25 by determining whether the heat radiation property of the particular material is substantially similar to the heat radiation property of aluminum nitride or alumina. Accordingly, it is submitted that claims 7 and 25 as they were considered in the Decision on Appeal of August 3, 2009, are not indefinite as alleged by the Board. However, in order to make claims 7 and 25 even more definite, claim 7 has been amended to recite the following additional feature:

wherein the good heat radiation property of the insulating material of the cover is a heat radiation property that is substantially similar to a heat radiation property of aluminum nitride or alumina,

and claim 25 has been amended to recite the following additional feature:

wherein the good heat radiation property of the insulating material of the main body is a heat radiation property that is substantially similar to a heat radiation property of aluminum nitride or alumina.

Seattle Box cited by the Board as support for the rejection states as follows:

Industrial argues that the use of the term "substantially equal to" in the '373 patent's claims makes the claimed subject matter indefinite and the claims invalid under 35 U.S.C. §112. Industrial contends, it appears, that since its patent counsel was uncertain as to just how equal "substantially equal to" is, the claims must be indefinite.

Definiteness problems often arise when words of degree are used in a claim. That some claim language may not be precise, however, does not automatically render a claim invalid. When a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree. The trial court must decide, that is, whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.

The trial court found here that an expert would know the limitations of the claims. The specification clearly sets forth, for example, that the divider blocks are intended to absorb the weight of overhead loads. Furthermore, even if Industrial needed to experiment so as to determine the limits of the '373 patent's claims, the claims would not be invalid under section 112. See, e.g., *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1557, 220 USPQ 303, 316 (Fed. Cir. 1983). Industrial has not carried its burden of persuading us that the '373 patent is invalid for indefiniteness.

Here, it is submitted that the term "substantially similar to" now recited in claims 7 and 25 is not indefinite for at least the same reasons discussed in *Seattle Box* that the term "substantially equal to" is not indefinite, and that one of ordinary skill in the art would be able to determine whether the heat radiation property of a particular material is "substantially similar to a heat radiation property of aluminum nitride or alumina" as now recited in claims 7 and 25, and thus whether the particular material "has a good heat radiation property" as recited in claims 7 and 25.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 7, 8, 25, and 26 (i.e., claims 7 and 25 discussed above and claims 8 and 26 depending therefrom) under 35 USC 112, second paragraph, be withdrawn.

Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with the filing of this paper, please charge the same to our Deposit Account No. 503333.


Respectfully submitted,

STEIN MCEWEN, LLP

Date:

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By:



Randall S. Svihla
Registration No. 56,273

1400 Eye St., NW
Suite 300
Washington, D.C. 20005
Telephone: (202) 216-9505
Facsimile: (202) 216-9510